DIONEX

# THERMAL STABILIZER (TS-2)
# INSTALLATION INSTRUCTIONS

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# THERMAL STABILIZER (TS-2) INSTALLATION INSTRUCTIONS

Installing the detector cell inside a Dionex Thermal Stabilizer (P/N 043117) minimizes fluctuations in cell and flow stream temperature and improves detection at trace levels. The Thermal Stabilizer (TS-2) contains two knitted coils potted into an aluminum block. One coil is for 4-mm column systems and one is for 2-mm column systems. The coils are knitted to provide superior heat exchange with minimal dispersion. The aluminum block provides a large thermal mass to stabilize the eluent flow stream. The block and the detector cell are housed in an insulated enclosure.

The Thermal Stabilizer can accommodate the cell from a Conductivity Detector Module (CDM) or a Pulsed Amperometric Detector (PAD). Sections 1.0 and 2.0 below contain instructions for installing the cells in the TS-2.

Section 3.0 explains how to install a TS-2 in the DX-100 Ion Chromatograph.

## 1.0 INSTALLATION OF A CONDUCTIVITY DETECTOR MODULE (CDM) CELL

1. Undo the latches on either side of the Thermal Stabilizer (TS-2), lift off the cover, and set it aside.

2. Two pink lines exit potted holes in the cell compartment of the TS-2. Disconnect the 0.5-mm ID (0.02-in ID) adapter connecting the pink lines. Also remove the two plastic bags containing tubing and fittings laying inside the bracket.

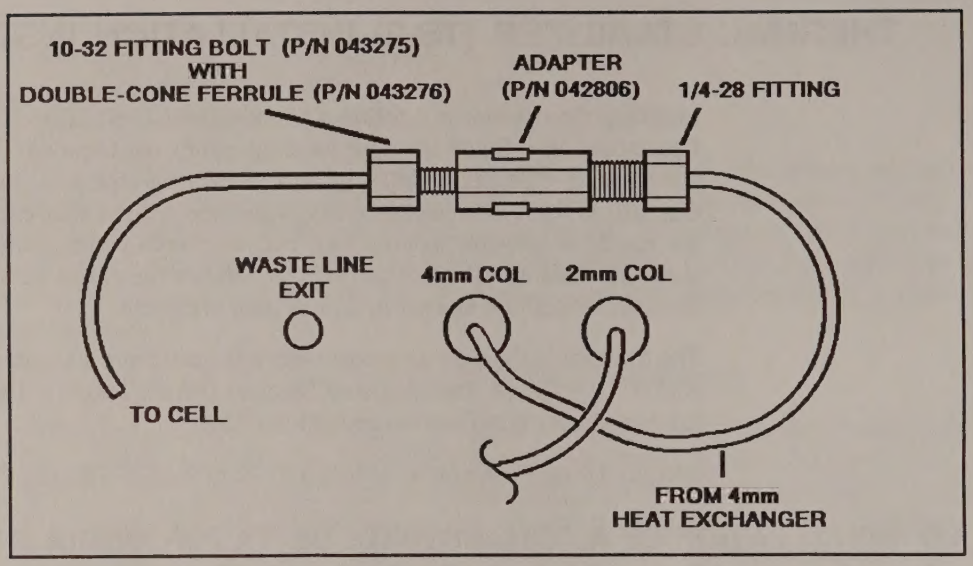
3. There are two Phillips screws, mounted on stand-offs, on the floor of the bracket. The screws and their washers are not needed for installation of the CDM cell. Remove them and store them for later use with a PAD cell.

4. Unscrew the long thumbscrew from the inside wall of the TS-2 and set it aside.

5. If you plan to use the TS-2 with a DX-100 Ion Chromatograph, install the TS-2 box now (see Section 3.0).

   **NOTE:** Dionex ThermoFlare fittings are used for the heatsink connections. Before making any tubing connections, verify that the ID of the flare is open. If necessary, gently insert a clean sewing needle into the flare to open the ID slightly. Be especially careful when opening the ID of either of the lines exiting the heatsink because they have a very small ID.

Figure 1
TS-2 Tubing and
Fitting Installation




6. Remove one of the 1/4-28 to 10-32 adapters from the parts bag mentioned in Step 2, above. If your analysis uses a 4- mm column, connect the line labeled *4mm Col* to the 1/4-28 end of the adapter. When using a 2-mm column, connect the line labeled *2mm Col* to the 1/4-28 end of the adapter. In either case, DO NOT OVERTIGHTEN THE FITTING.

7. Connect 12.5 cm (5 in) of PEEK tubing to the 10-32 end of the adapter [0.25-mm (0.010-in) ID for a 4-mm column; 0.13-mm (0.005-in) ID for a 2-mm column]. Push the adapter into the retaining clip as shown in Figure 1.

8. Connect the free end of the PEEK tubing noted in Step 7 to the inlet (bottom) of the CDM cell. Use the 10-32 fitting provided.

9. Connect 90 cm (36 in) of 0.25-mm (0.010-in) ID PEEK tubing to the outlet (top) of the CDM cell: this tube is the waste line. DO NOT OVERTIGHTEN THE FITTING. Slip the other end of the waste line into the small hole next to the 4-mm column heat exchanger.

10. Hold the CDM cell, with the outlet (top) facing up, over the bracket. Slide the cell cables through the slot in the bracket and then through the cutout in the wall of the TS-2 enclosure.

11. Hold the cell at an angle to align the small hole in the corner of the cell with the screw mounted on the inside wall of the bracket. Slide the cell over the screw.

12. While holding the cell in place with one hand, align the small hole in the top corner of the cell with the hole from which you removed the thumbscrew (Step 5). Use the thumbscrew to mount the cell on the wall of the bracket.

13. Route the cell cables through the slot in the bracket and then through the cutout in the side of the TS-2 enclosure.

14. Route the pink inlet lines through the small cutouts at the end of the box. Replace the cover of the TS-2 and redo the latches.

    **NOTE:** Make sure the cutouts in the cover are aligned with the cutouts in the bottom of the box and that no lines or cables are crimped.

15. Disconnect the 0.5-mm ID (0.02-in) ID adapter that connects the two pink inlet lines outside the TS-2. Use the remaining 1/4-28 to 10-32 adapter to connect the outlet of the separator or suppressor column to the appropriate line (i.e., either the *4mm Col* or *2mm Col* line).

16. Direct the end of the waste line into a waste container.

    **CAUTION: Operating with backpressure greater than 250 psi across the Thermal Stabilizer will cause irreparable damage to it. The 0.25-mm ID, 90-cm long (0.010-in ID, 36-in long) PEEK tubing installed in the outlet of the TS-2 is the optimal size for preventing excessive backpressure. DO NOT LENGTHEN THE OUTLET TUBING OR RESTRICT IT IN ANY WAY.**

## 2.0 INSTALLATION OF A PULSED AMPEROMETRIC DETECTOR (PAD) CELL

1. Undo the latches on either side of the Thermal Stabilizer (TS-2), lift off the cover, and set it aside.

2. Two pink inlet lines exit one side of the TS-2. Disconnect the 0.5-mm ID (0.02-in ID) adapter connecting the lines. Also remove the plastic bags containing tubing and fittings laying inside the bracket. Set the bags aside.

3. The long thumbscrew on the side of the bracket is not needed for installation of the PAD cell. Remove the thumbscrew and store it for use with a CDM cell.

   **NOTE: Dionex ThermoFlare fittings are used for heatsink connections. Before making any tubing connection, verify that the ID of the flare is open. If necessary, gently insert a clean sewing needle into the flare to open the ID slightly. Be especially careful when opening the ID of either of the lines exiting the heatsink because they have a very small ID.**

4. Remove one of the 1/4-28 to 10-32 adapters from the parts bag. If your analysis uses a 4-mm column, connect the line labeled *4 mm Col* to the 1/4-28 end of the adapter. When using a 2-mm column, connect the line labeled *2 mm Col* to the 1/4-28 end of the adapter. In either case, DO NOT OVERTIGHTEN THE FITTINGS.

5. Connect 12.5 cm (5-in) of PEEK tubing to the 10-32 end of the adapter [0.25-mm (0.010-in) ID for 4-mm columns; 0.13-mm (0.005-in) ID for 2-mm columns]. Push the adapter into the retaining clip as shown in Figure 1.

6. Use the 10-32 fittings provided to connect the free end of the tubing noted in Step 6, above, to the inlet of the PAD cell. DO NOT OVERTIGHTEN.

7. Connect 90 cm (36 in) of 0.25-mm (0.010-in) ID PEEK tubing to the outlet of the CDM cell: this is the waste line. DO NOT OVERTIGHTEN. Slip the other end of the waste line into the small hole next to the 4-mm column heat exchanger.

8. Mount the cell on the stand-offs in the bracket, using the screws and washers. Route the cell cables and the outlet line through the slot in the bracket and then through the cutout in the side of the TS-2 enclosure.

9. Route the pink inlet lines through the small cutouts at the end of the TS-2 enclosure. Replace the top of the enclosure and refasten the latches.

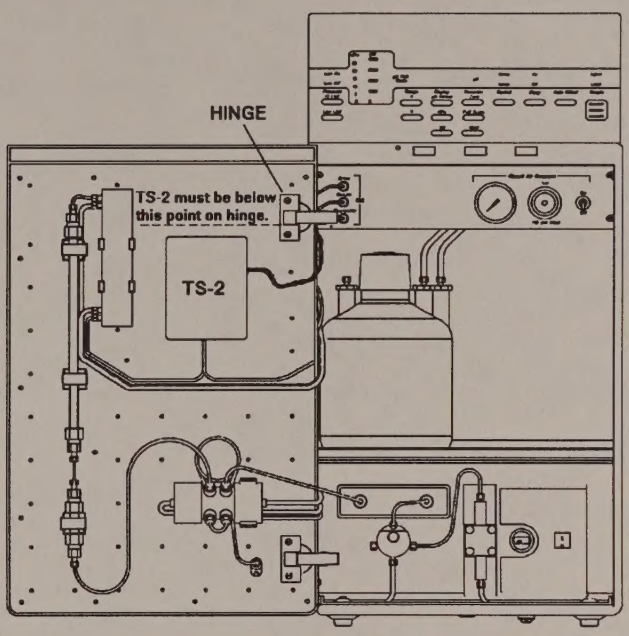
   **NOTE:** Make sure the cutouts in the cover of the enclosure are aligned with the cutouts in the bottom of the enclosure, and that no lines or cables are crimped.

10. Disconnect the 0.5-mm ID (0.02-in) ID adapter that connects the two pink inlet lines outside the TS-2. Set this adapter aside. Use the 1/4-28 to 10-32 adapter provided in the Ship Kit to connect the outlet of the separator or suppressor column to the appropriate line (i.e., either the 4-mm column or 2-mm column line).

11. Direct the end of the waste line into a waste container.

    **CAUTION: Operating with backpressure greater than 250 psi across the Thermal Stabilizer will cause irreparable damage to it. The 0.25-mm ID, 90-cm long (0.010-in ID, 36-in long) PEEK tubing installed in the outlet of the TS-2 is the optimal length for preventing excessive backpressure. DO NOT LENGTHEN THE OUTLET TUBING OR RESTRICT IT IN ANY WAY.**

**Figure 2**
**Installing a TS-2 in a DX-100 Ion Chromatograph**




## 3.0 INSTALLATION OF A TS-2 IN A DX-100 ION CHROMATOGRAPH

1. Secure the TS-2 enclosure (minus the foam) to the inside of the DX-100 door, using the two flat washers (P/N 043329) and two Phillips screws (P/N 039129) provided with the TS-2. Make sure the top of the enclosure is below the door hinge so that the door can be shut completely (see Figure 2). Replace the foam.

2. Refer to Section 1.0 for instructions on how to install the conductivity detector cell in the TS-2.

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